

524,797

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
4 March 2004 (04.03.2004)

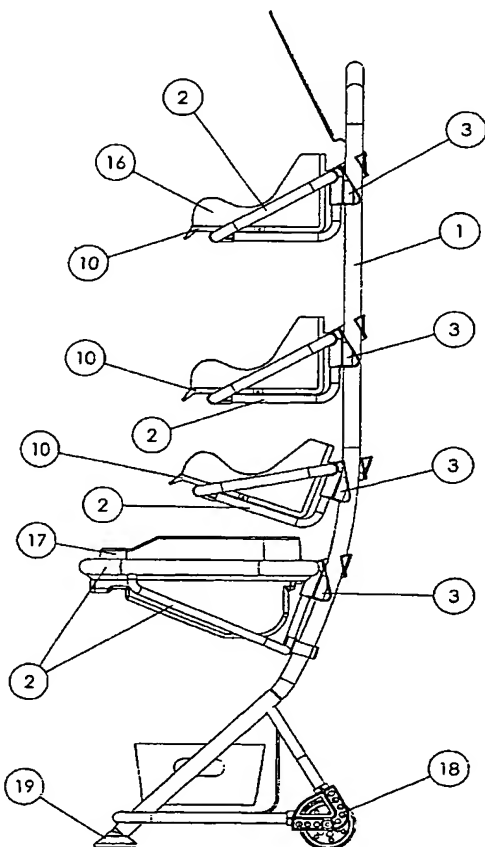
PCT

(10) International Publication Number  
**WO 2004/018117 A1**

- (51) International Patent Classification<sup>7</sup>: **B07C 7/02**, A47B 57/06, 57/20, 57/30
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- (21) International Application Number: **PCT/NZ2003/000185**
- (22) International Filing Date: 21 August 2003 (21.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 520900 21 August 2002 (21.08.2002) NZ
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: A STAND FOR MAIL SORTING AND OTHER APPLICATIONS



(57) Abstract: A mail sorting stand is of modular construction and includes two upright tubular frame members (1,1) and a shelving system consisting of a number of shelves (2) each of which comprises a lightweight tubular shelf frame. The shelves are connectable to the frame members by bracket parts (3) enabling the shelves to be mounted to and removed from the upright frame members from one side or from the front of the frame members. The frame members and preferably also the shelf frame parts are formed from lightweight metal tube, and the shelves include one or more trays (10) carried by the shelf frames.

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**Published:**

— *with international search report*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/NZ03/00185**

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: B07C 7/02 A47B 57/06, 57/20, 57/30

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DWPI: IPC Marks B07C 7/02, A47B 57/-, 96/06 A47F/-+Key words (Tube, Pipe, Post, Tilt, Incline, Shell, Modify, Adjust)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	FR 2519243 A (SIMON), 8 July 1983 Figures	1-16 17-22
X A	DE 2425837 A (KESSEBOHMER), 11 December 1975 Figures	1-16 17-22
X A	DE 29519639 U1(BERGMANN), 10 April 1997 Figures	1-16 17-22

☒ Further documents are listed in the continuation of Box C

☐ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
13 November 2003

Date of mailing of the international search report  
24 NOV 2003

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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/NZ03/00185

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	WO 01/89727 A (NEW ZEALAND POST LTD), 29 November 2001 Figures	1-16 17-22
A	DE 29619208 U1 (HEYER), 19 December 1996	1-22
A	EP 357920 B1 (LEITZ), 14 March 1990	1-22
A	EP 635316B1 (THE POST OFFICE), 22 September 1999	1-22

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/NZ03/00185

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
FR	2519243				
DE	2425837				
DE	29519639				
WO	0189727	AU	60848/01		
DE	29619208				
EP	0357920	DE	3829882		
EP	0635316	CA	2128632	CY	2137
				GB	2281234
					END OF ANNEX

In broad terms in one aspect the invention comprises a stand for mail sorting or other applications, which is of modular construction and includes one or more upright tubular frame members and a shelving system consisting of one or more shelves each connectable to the frame members by bracket parts enabling the shelves to be mounted to and removed from the upright frame members from one side or from the front of the frame members.

In broad terms in another aspect the invention comprises a stand for mail sorting or other applications, including one or more upright tubular frame members and a shelving system consisting of one or more shelves each connectable to the frame members by one or more bracket parts each including an entry on one side enabling the shelves to be mounted to and removed from the upright frame members from one side of the frame members.

In a preferred form the bracket parts include a hollow interior defined between an upper portion for engaging an upright member from the rear and a lower portion for engaging the upright member from the front when a shelf is mounted to the upright members, and an entry in the form of a longitudinally extending aperture on one side of the bracket part, so that the shelves may be mounted to the upright members by tilting a shelf upwardly from it's normal mounted position, moving the shelf on to the upright members from one side so that the tubular upright members pass through the entry passage into the brackets, and then dropping the shelf downwardly, to engage the shelf in position on to the upright members (and the reverse for removal).

Preferably the shelf members also include a lightweight tubular frame carried by the bracket parts for mounting a tray, bin(s), basket(s), or similar.

By tubular in relation to the upright frame member(s) is meant not only metal or plastic tube of a circular cross-section but also upright members having a hollow oval, square, or rectangular or other cross-sectional shape, and also in it's broadest sense the lightweight upright members forming the frame of the stand which may not have a closed tubular section but may have a U or C shaped cross-section shape for example.

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In broad terms in another aspect the invention comprises a support part or bracket for supporting an item from an upright member, including a hollow interior defined between an upper portion for engaging the upright member from the rear and a lower portion for engaging the upright member from the front when the item is mounted to the upright member, and an entry in the form of a longitudinally extending aperture on one side of the support part, so that the item may be mounted to the upright member by tilting the support part upwardly from it's normal mounted position, moving the support part on to the upright member from one side so that the tubular upright member passes through the entry passage into the support part, and then dropping the item downwardly, to engage the item in position on to the upright member (and the reverse for removal).

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

The invention is further described with reference to the accompanying drawings which show a preferred form mail sorting stand of the invention, by way of example and without intending to be limiting. In the drawings:

Figure 1 is a perspective view of the preferred form mail sorting stand,

Figure 2 is a view of the preferred form mail sorting stand from the front,

Figure 3 is a view of the preferred form mail sorting standing stand from one side,

Figure 4 is a view of the preferred form mail sorting stand from the rear,

Figure 5 is a view of the preferred form mail sorting stand from above,

Figure 6 is a view from one side of one shelf and bracket member of the preferred form mail sorting stand, in the direction of arrow A in Figure 2,

## CLAIMS:

1. A stand for mail sorting or other applications, which is of modular construction and includes one or more upright tubular frame members and a shelving system including of one or more shelves each connectable to the frame member(s) by one or more bracket parts enabling the shelves to be mounted to and removed from the upright frame member(s) from one side or from the front of the frame members.
2. A stand according to claim 1 wherein the stand comprises two or more upright tubular frame members connected together at an upper part of the frame members.
3. A stand according to claim 2 wherein the stand comprises two upright tubular frame members and a connection between an upper part of the frame members, which are formed from a single length of tubular material in an inverted U shape.
4. A stand according to either one of claims 2 and 3 wherein lower ends of the upright tubular frame members are provided with feet and/or wheels to contact the ground.
5. A stand according to claim 4 where the stand includes wheels at or towards a rear of the stand and feet at or towards a front of the stand.
6. A stand according to claim 5 wherein the upright tubular frame members extend forwardly at their lower ends towards the front of the stand and are provided at their lower ends with the feet, and wherein the wheels are provided on a subframe attached to and extending rearwardly from lower ends of the tubular frame members.
7. A stand according to any one of claims 1 to 6 wherein the shelving system includes a number of said shelves, which each include a lightweight tubular shelf frame each carried by one or more of said bracket parts for supporting a tray, bin, or basket.



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8. A stand according to claim 7 wherein said tubular shelf frame includes parallel rear and front frame parts for supporting a separately formed tray, bin, or basket.

9. A stand according to claim 8 wherein the shelf frame is formed by a single  
5 length of tubular material formed into an open rectangular shape.

10. A stand according to claim 8 wherein the bracket part(s) which connect the shelf frame to the frame member(s) are carried by the rear shelf frame part.

10 11. A stand according to either one of claims 9 or 10 wherein one or more of the shelves each carry on the shelf frame thereof a tray comprising a base and a rear wall.

12. A stand according to claim 11 wherein one or more formations on the back of the rear wall of the tray clip-connect to the rear shelf frame part and the underside of the  
15 base of the tray is supported by the front shelf frame part.

13. A stand according to either one of claims 11 to 12 wherein the tray comprises two or more similar tray segments which connect together.

20 14. A stand according to any one of claims 11 to 13 including partitions for dividing the tray across the stand.

15. A stand according to claim 14 wherein the tray is formed with a plurality of apertures spaced along the length of the tray into which said partitions may be engaged  
25 to connect the partitions to the tray.

16. A stand according to any one of claims 1 to 15 wherein the bracket part(s) include an entry on one side enabling the one or more shelves to be mounted to and removed from the upright frame members from one side of the frame members.

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17. A stand according to claim 16 wherein the bracket parts include a hollow interior defined between an upper portion for engaging an upright frame member from

the rear and a lower portion for engaging the upright frame member from the front when a shelf is mounted to the upright member(s), and said entry in the form of a longitudinally extending aperture on one side of the bracket part, so that the shelves may be mounted to the upright frame member(s) by tilting a front of a shelf upwardly relative to its normal position when mounted to the upright frame member(s), moving the shelf on to the upright member(s) from one side so that the tubular upright member(s) pass through the entry passage into the bracket(s), and then dropping the front of the shelf downwardly, to engage the shelf in position on the upright frame member(s) (and the reverse for removal).

18. A stand according to claim 17 wherein the upright frame member(s) include a series of apertures or indentations along the length(s) thereof into which a protrusion from the interior of the bracket part(s) may locate when shelves are mounted to the upright frame members.

19. A mail sorting stand which is a modular construction and includes two upright tubular frame members and a shelving system consisting of a number of shelves each of which comprises a lightweight tubular shelf frame and which shelves are connectable to the upright frame members by bracket parts enabling the shelves to be mounted to and removed from the upright frame members from one side or from the front of the frame members, and wherein the upright frame members and shelf frames are formed from lightweight metal tube, and also including one or more trays carried by the shelf frames.

20. A mail sorting stand according to claim 19 wherein the bracket parts and the trays are formed from a plastics material.

21. A stand according to either one of claims 19 and 20 wherein the bracket parts each include a hollow interior defined between an upper portion for engaging an upright frame member from the rear and a lower portion for engaging the upright frame member from the front when a shelf is mounted to the upright member(s), and said entry in the form of a longitudinally extending aperture on one side of the bracket part, so that the shelves may be mounted to the upright frame member(s) by tilting a front of a shelf

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upwardly relative it's normal position when mounted to the upright frame member(s), moving the shelf on to the upright member(s) from one side so that the tubular upright member(s) pass through the entry passage into the bracket(s), and then dropping the front of the shelf downwardly, to engage the shelf in position on the upright frame member(s) (and the reverse for removal).

22. A support part or bracket for supporting an item from an upright member, including a hollow interior defined between an upper portion for engaging the upright member from a rear and a lower portion for engaging the upright member from a front when the item is mounted to the upright member, and an entry in the form of a longitudinally extending aperture on one side of the support part, so that the item may be mounted to the upright member by tilting the support part upwardly from it's normal mounted position, moving the support part on to the upright member from one side so that the tubular upright member passes through the entry passage into the support part, and then tilting the item downwardly, to engage the item in position on the upright member (and the reverse for removal).